



FirstEnergy Nuclear Operating Company

Davis-Besse Nuclear Power Station
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10 CFR 50.55a

Docket Number 50-346

License Number NPF-3

Serial Number 2797

August 1, 2002

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: 10 CFR 50.55a Requests for Alternatives Pursuant to American Society of
Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code)
Requirements at the Davis-Besse Nuclear Power Station - Third Ten-Year
Interval Inservice Inspection Program (RR-A26 and RR-A27)

Ladies and Gentlemen:

Pursuant to 10 CFR 50.55a(a)(3), the FirstEnergy Nuclear Operating Company (FENOC) requests NRC approval of two proposed alternatives to requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for the Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) Third Ten-Year Interval Inservice Inspection Program.

As described by letter dated June 14, 2002 (DBNPS Serial Number 1-1276), the DBNPS is replacing its existing Reactor Vessel Closure Head (RVCH) with the unused Midland Plant RVCH. The attached two requests propose alternatives to the ASME Code Section XI requirements associated with the replacement RVCH. The first request, RR-A26, describes the additional weld radiography recently performed to supplement the radiography performed during original construction of the replacement RVCH, thereby validating the Code Data Package and addressing certain records no longer available in the original documentation package. The second request, RR-A27, addresses the radiography recently performed on the replacement RVCH Head-to-Flange Weld. The radiography covered approximately 95% of the RVCH Head-to-Flange Weld, and performance of radiographs for 100% of the weld would result in undue hardship without any increase in quality.

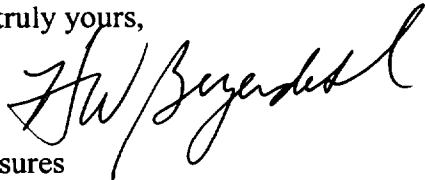
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NRC review and approval of the proposed alternatives is requested by September 13, 2002.

If you have any questions or require additional information, please contact Mr. Patrick J. McCloskey, Manager-Regulatory Affairs, at (419) 321-8450.

Very truly yours,

A handwritten signature in black ink, appearing to read "J. E. Dyer", written over the closing "Very truly yours,".

Enclosures

cc: J. E. Dyer, Regional Administrator, NRC Region III
D. V. Pickett, DB-1 NRC/NRR Project Manager
C. S. Thomas, DB-1 Senior Resident Inspector
Utility Radiological Safety Board

**FIRSTENERGY NUCLEAR OPERATING COMPANY
DAVIS-BESSE UNIT 1
THIRD 10-YEAR INTERVAL
10 CFR 50.55a REQUEST RR-A26**

1. ASME Code Components Affected

Replacement Reactor Vessel Closure Head (RVCH) - Component C24-2013-52-1 - ASME Code Class 1 (Replacement for the existing Davis-Besse Nuclear Power Station RVCH – Component 620-0014-52):

- RVCH Head-to-Flange Weld (Weld WH-7)
- 69 Control Rod Drive Mechanism (CRDM) Nozzle Body-to-Flange Welds (Weld WH-9)

2. Applicable Code Edition and Addenda

ASME Code Section XI, 1995 Edition through the 1996 Addenda

ASME Code Section III, 1968 Edition, Summer 1968 Addenda (Construction Code for the replacement RVCH)

3. Applicable Code Requirement

IWA-4221(a) of the 1995 Edition through the 1996 Addenda of ASME Code Section XI requires that an item to be used for repair/replacement activities meet the Owner's Requirements and the applicable Construction Code to which the original item was constructed.

IX-336 of the 1968 Edition, Summer 1968 Addenda of ASME Code Section III requires that copies of procedure and personnel qualification data and radiographs with accompanying review forms including interpretation and disposition be maintained in accordance with requirements of IX-225.

IX-225(c), Quality Control Records – Duration of Files, of the 1968 Edition, 1968 Addenda of ASME Code Section III, requires that the vessel manufacturer maintain these records for at least ten (10) years after vessel completion. After that time, the manufacturer may either continue to maintain these records or may transfer the records and responsibility for their maintenance (for the life of the vessel) to the owner.

4. Proposed Alternative

The construction radiography film and the accompanying review forms (reader's sheets) for the replacement RVCH Head-to Flange Weld (WH-7) and the CRDM Nozzle Body-to-Flange Welds (WH-9) are not available, although the original Code Data Form showing the activities were preformed is available. As a proposed alternative, the RVCH Head-to-Flange Weld (WH-7) and the 69 CRDM Nozzle to Flange Welds (WH-9) were recently subjected to radiographic examination. The area of the RVCH Head-to-Flange Weld subjected to radiography was approximately 95% due to the fullness of the lifting lugs. The area of the CRDM Nozzle Body-to-Flange Welds subjected to radiography was 100%. Records of these examinations will be included in the code data package for the replacement RVCH.

5. Basis of Alternative for Providing Acceptable Level of Quality and Safety

The replacement RVCH is an ASME Code Section III Stamped Class A Vessel meeting the requirements of the 1968 Edition, Summer 1968 Addenda of ASME Code Section III. This is attested to by the Manufacturer's Data Report for Nuclear Vessels (Form N-1A) (Code Data Form) for the Midland Reactor Vessel, of which the RVCH is a part. The Code Data Form was signed by both the constructor, Babcock & Wilcox (B&W), and the Authorized Nuclear Inspector, stating that the Midland Reactor Vessel conforms to the rules of the 1968 Edition, Summer 1968 Addenda of ASME Code Section III. This completed certification provides evidence that the required construction radiographs were performed and the results were acceptable.

The purpose of the construction radiographic film and reader's sheets is to demonstrate performance and acceptance of the radiographic examination. A log recording the performance of the radiographs is included in the records package. This, coupled with the signed Code Data Form signifying compliance with ASME Code Section III, provides evidence that the radiographic examination of the replacement RVCH Head-to-Flange Weld and the CRDM Nozzle Body-to-Flange Welds was performed and accepted.

Radiographic examinations of approximately 95% of the weld volume of the RVCH Head-to-Flange Weld and 100% of the weld volume of the 69 CRDM Nozzle Body-to-Flange Welds were conducted. No indications exceeding the acceptance standards were found, thus validating the original Code Data Form. The reader's sheets and radiographs for these examinations will be included in the data package for the replacement RVCH to supplement the existing construction non-destructive examination records.

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This proposed alternative is requested in accordance with 10 CFR 50.55a(a)(3)(i). The original Code Data Form indicating compliance with the requirements of the 1968 Edition, Summer 1968 Addenda of Section III, coupled with the recent satisfactory performance of radiographic examinations of the RVCH Head-to-Flange Weld and the 69 CRDM Nozzle Body-to-Flange Welds provides assurance that these welds meet the acceptance standards of the ASME Code and therefore provides an acceptable level of quality.

6. Duration of Proposed Alternative

This alternative is proposed to be in effect until the end of the service life of the replacement RVCH, or until the end of the duration of the Third Ten-Year Inservice Inspection Interval (September, 2010), whichever occurs sooner.

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**FIRSTENERGY NUCLEAR OPERATING COMPANY
DAVIS-BESSE UNIT 1
THIRD 10-YEAR INTERVAL
10 CFR 50.55a REQUEST RR-A27**

1. ASME Code Components Affected

Replacement Reactor Vessel Closure Head (RVCH) - Component C24-2013-52-1 - ASME Code Class 1 (Replacement for the existing Davis-Besse Nuclear Power Station RVCH – Component 620-0014-52):

- RVCH Head-to-Flange Weld (Weld WH-7)

2. Applicable Code Edition and Addenda

ASME Code Section XI, 1995 Edition through the 1996 Addenda

ASME Code Section III, 1968 Edition, Summer 1968 Addenda (Construction Code for the replacement RVCH)

3. Applicable Code Requirement

IWA-4221(a) of the 1995 Edition through the 1996 Addenda of ASME Code Section XI requires that an item to be used for repair/replacement activities meet the Owner's Requirements and the applicable Construction Code to which the original item was constructed.

N-462.2 of the 1968 Edition, Summer 1968 Addenda of ASME Code Section III requires that Category B full penetration welds as defined in paragraph N-461 be *fully* radiographed in accordance with paragraph N-624.

4. Basis for Hardship or Unusual Difficulty without Compensating Increase in Level of Quality or Safety

The RVCH Head-to-Flange weld is an N-462.2 Category B joint with a full penetration weld as defined in paragraph N-461, and was performed as indicated by the completed Code Data Form. A supplemental radiographic examination of the RVCH Head-to-Flange Weld was recently conducted. The radiograph of the RVCH Head-to-Flange Weld examined approximately 95% of the weld. Three lifting lugs restricted access to the portion of the weld covered by the lifting lugs (See Attachment 1). In order to obtain 100% coverage of the weld, the lifting lugs, which are attached by full penetration welds, would have to be removed and then

re-attached following completion of the radiographic examination. Then, following re-attachment of the lifting lugs by welding, the RVCH would require post-weld heat treatment in accordance with the requirements of N-530 of the 1968 Edition, Summer 1968 Addenda of ASME Code Section III. Such heat treatment could potentially distort the adjacent Control Rod Drive nozzles. The measures necessary to obtain full radiographic coverage of Weld WH-7 would result in a considerable hardship without a compensating increase in the level of quality and safety.

5. Proposed Alternative and Basis for Use

The replacement RVCH Head-to-Flange Weld is an N462.2 Category B full penetration weld. Complete documentation that this weld was radiographed per N462.2 is not available. Specifically, the construction radiographic film and the accompanying review forms (reader's sheets) for the replacement RVCH Head-to-Flange Weld (WH-7), necessary to provide full documentation that the weld was fully radiographed, are not included in existing records.

As an alternative, the replacement RVCH Head-to-Flange weld (WH-7) was recently subjected to radiographic examination to supplement the original construction radiography. Due to the three lifting lugs, the area of the RVCH Head-to-Flange Weld subjected to radiography was approximately 95%.

No indications exceeding the acceptance standards were found during the supplemental radiographic examination of the RVCH Head-to-Flange Weld. In addition to the supplemental radiograph, a pre-service ultrasonic testing was performed on the weld, and no recordable indications were found. This, together with the existing records (described below), provides high confidence in the acceptable quality and integrity of the weld.

The replacement RVCH was part of an ASME Code Section III Stamped Class A Vessel meeting the requirements of the 1968 Edition, Summer 1968 Addenda of ASME Code Section III. This is attested to by the Manufacturer's Data Report for Nuclear Vessels (Form N-1A) (Code Data Form) for the Midland Reactor Vessel, of which the RVCH is a part. The Code Data Form was signed by both the constructor, Babcock & Wilcox (B&W), and the Authorized Nuclear Inspector, stating that the Midland Reactor Vessel conforms to the rules of the 1968 Edition, Summer 1968 Addenda of ASME Code Section III. This certification provides evidence that the required construction radiographs were performed and the results were acceptable. In addition, although the construction radiographic film and reader's sheets are not available, a log recording the performance of the radiographic examination of the RVCH Head-to-Flange weld is available. These existing records provide assurance that full radiographic examination of the RVCH Head-to-Flange Weld was performed and the results were acceptable.

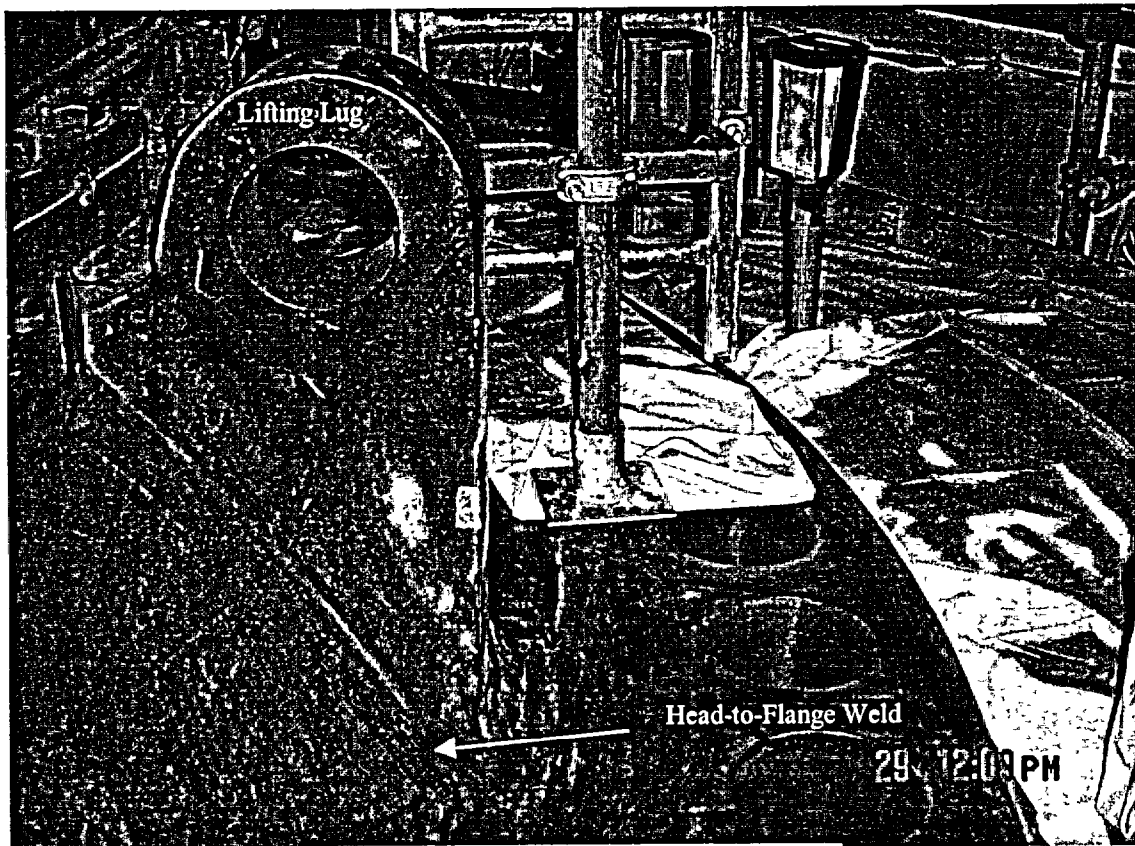
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NRC approval of the proposed alternative is requested in accordance with 10 CFR 50.55a(a)(3)(ii). Full radiographic coverage of the RVCH Head-to-Flange Weld would require removal of the lifting lugs. Removal of the lifting lugs, reattachment, and post-weld heat treatment would result in a considerable hardship without a compensating increase in the level of quality and safety.

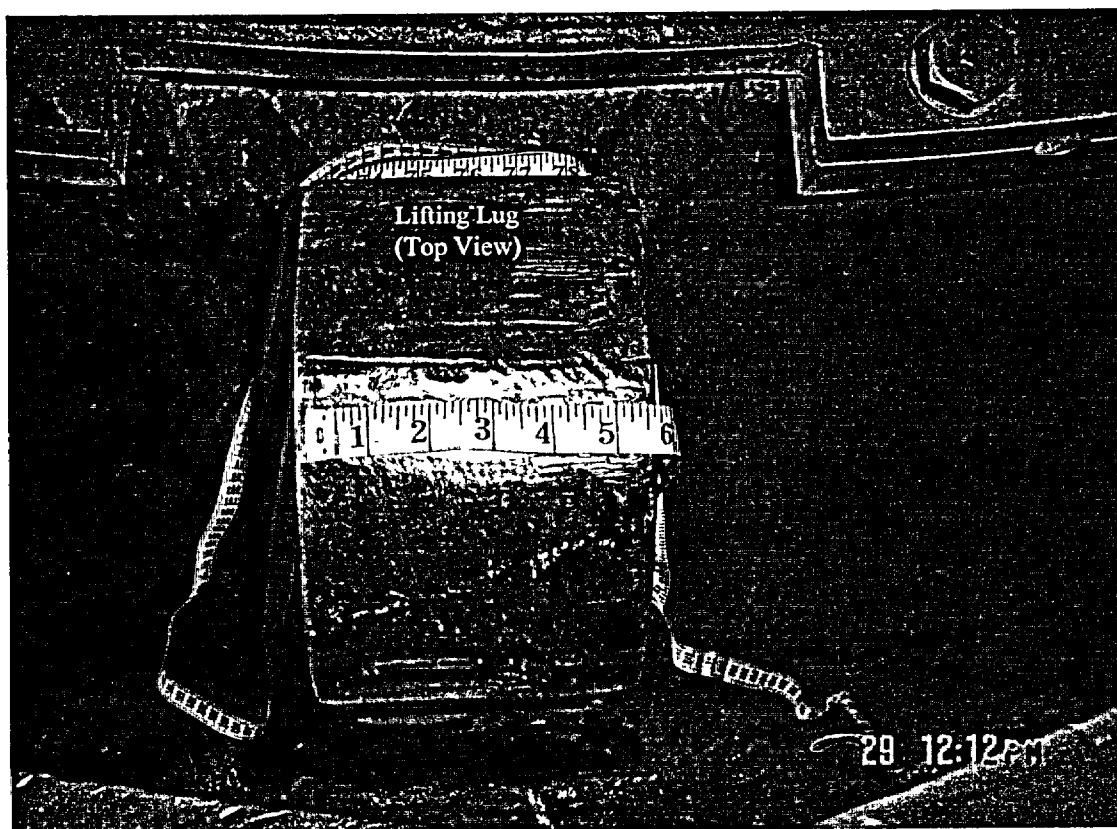
6. Duration of Proposed Alternative

This alternative is proposed to be in effect until the end of the service life of the replacement RVCH, or until the end of the duration of the Third Ten-Year Inservice Inspection Interval (September, 2010), whichever occurs sooner.

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Attachment 1



RVCH Lifting Lugs (One of Three)



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Enclosure 3

COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station (DBNPS) in this document. Any other actions discussed in the submittal represent intended or planned actions the DBNPS. They are described only for information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs (419-321-8450) at the DBNPS of any questions regarding this document or associated regulatory commitments.

COMMITMENTS

DUE DATE

Records of the replacement RVCH Head-to-Flange Weld (WH-7) radiographic examinations will be included in the code data package.

Code data package completion.